

DARING DEEDS OF UNSUNG SOLDIERS OF SCIENCE

Formal Reports of Great Discoveries, Especially Those of Preventive Medicine, Could Be Made Thrilling Tales by Recital of Facts

HIDDEN behind the technical reports of great medical discoveries are many romances of intense human interest. The plodding work of years of the soldiers of science is never revealed in the formal record of results. Adventure that would enthrall a novelist to a masterpiece is lost completely. The accompanying article only hints at the bare possibilities of the subject, although it is as complete as painstaking inquiry can make it. Probably the epic of Dr. Noguchi's work in the fever stricken areas of South and Central America never will be told and the world is the loser thereby.

By WILLIS STEELL.

FEW things are more aggravating in the experiences of the general news writer than his effort to get the "human interest" element out of stories told him by soldiers of science upon their return to civilization from the wilds where they have been prosecuting investigations. On these, the descriptive parts of the journey, the scientists are almost invariably inarticulate. What happened to them personally figures even less than incidentally. Adventures that might excite, and should excite, them they rarely mention, and when they do so it is but casually. It is more than likely that these personal things fade from memory at once and leave not a trace behind.

A hairbreadth escape from a wild beast, a tumble into what a novelist would describe as a "bottomless abyss," bare safety from flood, starvation, attacks by cannibals, the sort of thing, in fact, that a Herman Melville would have made a long book about, they don't give even a paragraph in their studied but cold accounts of what they have accomplished at risk of life and limb.

Clearing out all this extraneous matter as if it were mere underbrush, they let the light of science fall only on the discoveries they have been permitted to make for science. Even in familiar talks to friends this scientific reticence remains fully as marked.

The case of the great scientists attached to the Rockefeller Institute of Medical Research in their fight—a winning fight—with yellow fever is pertinent. Who would not have read with deepest interest what happened to these soldiers of science in their successful campaign in Ecuador or their subsequent adventures in Yucatan, where they stamped out the last seed beds there of yellow fever?

Incidents of Daily Lives

Would Be Most Interesting

Who would not have followed step by step the daily lives of these men, especially as accompanying these details would have come, as it has just come, the amazing official report from the Department of the Interior and Sanitation of Ecuador that there has not been a single case of yellow fever in Ecuador since May 22, 1919? And that the last chapter of yellow fever seems to have been written when the Rockefeller Medical Commission completed its work and Dr. Hideyo Noguchi discovered the causative germ of the pest?

Especially interesting would be their human interest tales if these men could tell them, since with the fear of yellow fever dispelled the fear of visiting many beautiful countries has gone too, and people of all lands are visiting them.

What has been done in nearby countries of Central and South America will be repeated in Peru, and there, it is rumored, the Medical Commission had many thrilling experiences.

Yet all that Dr. Noguchi has been driven to say about his life there is bald and incomplete. He merely has mentioned that there were "inconveniences" in getting about owing to the mountainous nature of the country.

"Inconveniences!" There must have been felt some of these "inconveniences" in getting about Yucatan where the work of investigation led into a region uninhabited to-day, past ancient ruined cities that gave overwhelming evidence of a once great population of Maya Indians who built vast platforms, pyramids, temples and palaces. These ruins only to be seen through a screen of briars, bringing up thoughts of a nearly extinct nation and awakening all sorts of historical questions, might have had power to interrupt a search for a peculiar mosquito, at least for a short time. That it did not exhibit the forceful concentration of the scientific mind.

The Indian and the white man furnish blood to the peculiar mosquito that it prefers to the blood of the negro. And perhaps when the Maya Indians flourished in their great cities this mosquito had already become domesticated. It is probable, indeed, that the *Leptospira icteroides* that Dr. Noguchi has found to carry the germ of yellow fever was a domesticated insect in the ancient Maya days. All the conditions existed then to promote his general breeding habit. Water was stored in cement lined cisterns, which the mosquito finds ideal for his malign purpose, and there were always water jars and gourds at hand.

Yellow Fever Was a Plague

Before the Spanish Invasion

Truly there exist evidences in Yucatan of the early knowledge and dread of the pest and perhaps one day the date of the entrance of yellow fever into human history will be found. At present it is lost in the mist of the past, but this much is known: Maya Indians died plentifully of yellow fever before the conquering Spaniards overran their country.

It would seem that as an interesting and valuable side issue the commission might have sought for—and perhaps found—the date of the birth of the pest, but it was made up of scientists who had nothing to do

Dr. Hideyo Noguchi, noted Japanese physician associated with the Rockefeller Institute of Medical Research, whose discoveries have world-wide fame and inestimable value.



Yellow fever was ravaging certain districts there and menacing all nearby and semitropical countries, including the West Indies and our own Southern States. By means of a serum which Dr. Noguchi had used effectively in Guayaquil the mortality from the pest was enormously reduced.

It may be as well to remind ourselves who this Japanese is. Educated in the schools of Japan and in the Tokio Medical College, Dr. Noguchi came to this country twenty-one years ago, and almost at once became associated with the Rockefeller Institute in New York city. He has long been a successful hunter of obscure bacterial incitants of infectious diseases, and by his command of cultural technique and by untiring patience and devotion he has thrown light into many dark corners of biology.

In Japan he had cultivated the inciting germ of a disease called infectious jaundice, which is parasitic in rats and other wild animals, and in insanitary places frequented by them it frequently attacks humans and incites serious and fatal disease. The jaundice thus briefly referred to resembles yellow fever.

Therefore Dr. Noguchi knew measurably what he was in search of, and he and his associates were welcomed at Merida by a group of physicians who were eager to aid him in chasing down the elusive pest breeder. These doctors had already failed to induce the cultivation in guinea pigs, but Dr. Noguchi succeeded.

Through a transference to the guinea pigs of a small quantity of the blood of yellow fever patients in the early stages of the attack he found symptoms and changes similar to those observed in the humans. The pigs speedily developed fever, they grew yellow and became torpid and very sick. Many died.

The blood of these experimental victims conveyed to other guinea pigs induced the disease anew through many sequences, and in this infected guinea pig blood was detected by the microscope a minute organism which resembled the *Leptospira* of infectious jaundice.

Leptospira means slender spiral, a mobile thing. It is a very delicate filament tapering at the ends. It wriggles, twists about and revolves in the blood or culture food.

Expedition to Trace Yellow Fever Germ Only One Example of Romances That Never Were Published—What Dr. Noguchi Accomplished

In a "dark field illumination," by which alone it can be seen, it does not resemble a definite object. To signalize its power to turn the skin yellow Dr. Noguchi added to the name a surname, *icteroides*. Thus in the vernacular the new pest germ bears the name "slim spiral, the jaundice maker."

Tests with the blood serum of convalescent yellow fever patients indicated that the slim spiral was probably the inciting agent of yellow fever. Since his return to his laboratory in this city Dr. Noguchi has been at work trying to read the life story of the Slim Spiral, his newest addition to his collection of inducers of human ills, and in searching for an immunizing or curative yellow fever serum. He follows the custom of scientific men by not making claims of discovery, being satisfied to record details and observations. It is probable, too, that he feels the study of more cases in a new locality is desirable.

This year Dr. Noguchi printed a paper on "Recent Experimental Studies on Yellow Fever," in which he made the positive statement that yellow fever is transmitted only through the bite of a female mosquito, the *Stegomyia*. Established also were the exact conditions under which these infected mosquitoes acquire and retain their infectivity for man.

The male mosquito is not innocent by intention, but he happens to have so flabby a proboscis that he cannot get through the skin to suck blood. Apparently his wife is not at all affected by the poisonous germs which she imbibes with the infected blood and with her its transmission is only an incident in an honest day's work.

In a paper subsequently printed on the "Prophylaxis and Serum Therapy of Yellow Fever," Dr. Noguchi affirms ability to produce yellow fever experimentally and obtain cultures of *Leptospira icteroides*, the latest confirmation coming from Dr. Le Blanc of the Rockefeller Institute.

Dr. Noguchi writes in this second monograph:

"The specific immunity reaction for *Leptospira icteroides* demonstrated with the serums of yellow fever convalescents in Guayaquil, Merida and Peru constitutes further proof of the etiologic relation of this organism to yellow fever.

"The existence of this property in convalescent serum led to a study of the possibility of preparing a specific immune serum for the treatment of yellow fever and to a consideration of the effect of the inoculation of killed cultures of *Leptospira icteroides* as a means of protection against the disease.

Animals Made Immune

By Injection of Cultures

"Early experiments showed that the injection of killed cultures (named above) into susceptible animals conferred on them a state of immunity which rendered them resistant to subsequent inoculation with virulent cultures. The duration of this immunity has been found to be at least five to six months; the maximum duration is yet to be determined."

The serum was first tried in the treatment of a man in September, 1919, when an American marine on the U. S. S. Chicago, off Honduras, was treated by Gen. T. C. Lyster and Dr. W. Pareja. Gen. Gorgas was present and the value of the serum was definitely indicated. Up to December 31, 1920, the total number of cases of human beings treated by the serum was 170. "An examination of the results of serum

treatment," wrote Dr. Noguchi, "in various localities shows a general agreement among them; the earlier serum is given, the lower the mortality."

"The reduction in mortality among cases treated on or before the third day is undeniable. On the other hand, the serum does not seem to exhibit any beneficial effect on the course of the disease when given after the fourth day of illness."

"Comparison of the mortality rates among untreated cases with those of cases treated with serum on or before the third day brings out a great difference in favor of the treated cases, which it is difficult to explain on the ground of accidental coincidence."

Serum of No Value

After the Fourth Day

"Apparently the serum actually helped to cut the infection short before it had caused irreparable injury to the organs, particularly the kidneys. Once such injuries have been done, however, as is usually the case in severe yellow fever by the fourth day of illness, the serum cannot be expected to effect any restoration. In certain of these cases, however, a marked improvement has been reported to have occurred after the administration of serum, owing probably to the fact that injury and disorganization were proceeding slowly."

From the knowledge of the mosquito as a carrier of the incitant of yellow fever and apparently its only source it was clear that the way to prevent the spread of the scourge was either by keeping the mosquitoes from getting at the patients in the early days of their illness through the effective screening of windows and doors or by killing as many of the pests as possible and discouraging the breeding of others by cleaning up the puddles and old cans of water near dwellings in which they breed and near which they love to linger all their lives.

The challenge to science was to discover, so definite and demonstrable a living thing as this yellow fever germ which could hide itself away in a drop of blood or in the carcass of a mosquito. The challenge was taken up and pursued until the ancient strongholds of ignorance and belief in fate have been overthrown.

In commenting on what has been done as a sort of summary of his paper, the latest to date, Dr. Noguchi says:

"It is understood that vaccination constituted only a part of the campaign against yellow fever, and in all the localities (where experimental work was done) it was carried out simultaneously with the antistegomyia campaign. (That is, the fight against the lady mosquito.)

"Just what part the vaccination played in checking the further spread of the disease is therefore not easily estimated; but one fact stands out, namely, that practically all persons vaccinated escaped yellow fever, notwithstanding the opportunities for infection to which both vaccinated and unvaccinated were alike exposed under otherwise identical conditions, as shown by the fact that during the period of ten days following vaccination, before the protective effect of the vaccine could have developed, the number of victims of yellow fever among vaccinated and unvaccinated was equally great.

"Vaccination, which protects the non-immune person from infection, is a valuable weapon in itself, although it does not supplant the method of elimination of yellow fever by the antistegomyia campaign."

Reduction of Mortality

When Serum Is Provided

The transmission of yellow fever from man to guinea pigs and the isolation of the Slim Spiral have been repeatedly accomplished by various workers in the course of different epidemics; in Guayaquil, by Noguchi (1918); in Merida and Peru, by Noguchi and Kligler (1919-1920); in Plura, by Gastiburu (1919); in Vera Cruz, by Perez-Grovas (1920), and by Le Blanc (1921).

The new serum, Dr. Noguchi states, reduces the mortality in yellow fever when used on or before the third day of the disease. He summarizes:

"Of 170 cases, ninety-five have been treated on or before the third day, with thirteen deaths (13.6 per cent. mortality), while the average death rate of untreated patients during these epidemics has been 56.4 per cent.

"Four hundred and forty-two deaths among 783 cases in these figures were not treated with the serum. Treatment with the serum after the fourth day has no appreciable effect, since there were thirty-nine deaths among seventy-five cases. This is 52 per cent. mortality.

"Prophylactic inoculation of the killed culture is of definite protective value. Among 3,230 persons vaccinated twice no case of yellow fever developed, while 267 cases occurred among the non-vaccinated (Guatemala, Salvador, Tuxpam), notwithstanding the fact that both groups of individuals were equally exposed to infection.

"Among 4,307 persons receiving only a single inoculation of the vaccine only five suspicious cases developed. These figures are reported from Salvador.

"The protection resulting from vaccination does not become effective until about ten days after the last injection, as shown by the frequent case incidence occurring among the vaccinated population within from one to ten days after they were vaccinated. There were twenty-three such cases among 7,537 persons who were vaccinated with the standard vaccine."

Newly Rich Americans Easy Prey in Europe

Own Countrymen Swindle Them Heartlessly of Millions, Paris Police Report

Special Correspondence of THE NEW YORK HERALD.

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"FINEST crop of suckers ever. And by all the signs the next should be even better."

Such is the estimate of the 1921 tourist season in France given THE NEW YORK HERALD by one of the most eminent professors of the "con" game now resident in this country. Never, he added, has money been so easily made in Europe or so much of it. For the first time since Armistice Day he is allowing himself the luxury of a visit home, leaving the winter season in the Riviera and Egypt to look after itself.

For a time, according to his authority, the war played havoc with the confidence trickster. Passport regulations, limitation of travel and "drafts" made life unbearable and unprofitable. Before America came in most European practitioners went to New York, whence they were later driven to Mexico and South America as the last remaining refuges and where they found only poor living. But since ocean travel became possible again they are back at their old haunts and playfully recognizing that, whoever else may have suffered, the war was for them a blessing in disguise.

The world has been turned upside down, the old social distinctions have been knocked high; the New Rich abound everywhere—and they are the natural prey of the Bunco Steerer. All the European resorts are swarming with wealthy people, whose riches have come to them in many cases by the fortune of war without any necessary shrewdness on their part. They are uncertain of themselves, ill at ease in their accustomed surroundings and only too ready to fall into the arms of any polite, kindly, well-seeming stranger ready to take notice of them. At a low estimate more than five million good American dollars have changed hands—confidentially—in Europe in

the last six months—unfortunately the largest share coming out of good American pockets.

So far the professional estimate. And it is entirely borne out by police records and police evidence. Here is an example, quoted from a Paris paper of recent date, of what has been happening, not only day by day but often dozens of times in the same day. "An American visitor to Paris was robbed yesterday of \$500 and \$500 American. Mr. — told a police inspector that on leaving a bank where he had cashed a draft he was engaged in conversation by two men, one American and the other English. The three eventually dined together, and after dinner Mr. — was asked if he would go and buy some expensive cigars, for which one of his companions gave him 100 francs. As a pledge of his honesty it was suggested that he leave his pocketbook with his 'friends.' This he did, but as he went away he saw them spring into a taxicab. Mr. — followed, whereupon the two men burst out laughing, explained that it was all a joke and handed back the pocketbook. Only when they had gone did he discover that the notes had been removed from it."

The police of Paris, who have been taking energetic steps to clean the city of the "con" man and his tribe, express themselves as especially struck by the lack of novelty shown in their methods. The simplest form of the confidence trick has been the most popular and in most cases perfectly successful, as in that quoted above. Nor is it alone in smacking of the days of the Pharaohs.

Only a week or two since, for example, a young man was arrested for swindling fashionable tradesmen, especially jewelers. He did so, as whole generations of swindlers have done before him, by securing two adjoining rooms in a fashionable hotel, announcing himself as a Russian prince, cousin of the late Czar, and instructing the jewelers by telephone to submit costly goods for his approval at the hotel. One and all fell to it, sent the goods in charge of

trusted assistants. The "Prince" asked them to excuse him for a moment while he showed them to his wife, who was sick in the next room, carefully closed the inner door behind him—and forgot to come back.

Another successful ramp carried out during the past season was in connection with "Seeding the Battlefields." An American trickster opened an office and offered personally conducted automobile tours at rates very much lower than those charged by the reputable agencies. To prospective clients he explained that so great was the rush of business that he could only book seats for several weeks ahead, the full charge to be paid at the time of booking. Although he never made even a pretense of fulfilling his promises he was able to carry on his "business" for several months and finally to get clear away with his plunder.

It is a curious fact that the greatest difficulty the police encounter in their war upon tricksters is the reluctance of the victims to lodge complaints or even to give evidence when called upon. The 1921 crop appears to have considered that they had to pay for experience, even perhaps to regard the experience as worth the price. In at least one case the action of the authorities was brought to naught by the disappearance not of the suspect but of the two principal witnesses who had from the first displayed the greatest reluctance to give any information at all.

Largely because of this paradox, which is as strongly evident in the French themselves as in other nationalities, the "con" man has come to evince a disregard for the police authorities which is nothing less than galling. At the present time there is under remand in Brittany a man named Bourgeois accused of carrying out a widespread system of "confidence" operations in the Orient and the neighboring watering places, chiefly among local business men. The one outstanding feature in the case is that when the police took a hand in the matter it was to dis-

cover that the suspect was already "wanted" for similar frauds carried out successfully in May last—and that he had not even troubled to change his name or make any effort at all to disguise his identity.

It is sufficiently evident that the American visiting Europe next year has reason to be on his guard against sympathetic and amiable strangers speaking his own language and prompt with offers to help in any of the little contretemps inevitable to foreign travel, especially to those who do not speak the language of the country. The one golden rule to escape from them, as given to THE NEW YORK HERALD by the eminent professor already quoted, is of the simplest. "Never mix your drinks in strange company." As traveling Americans notoriously obey the laws of their country to the letter, even when abroad, it is doubtful whether this will help any.

Cigarette Holders

All the Rage

ONE person in every five uses a cigarette holder every year in the United States according to the production figures of that minor industry. Between 16,000,000 and 20,000,000 of these tubes are manufactured annually nowadays in this country, while 200,000,000 are used annually in Europe and South America. In price these holders range from the "two for five" paper tubes up to jeweled ones that cost as much as \$1,500.

In Fifth Avenue shops dealing in fine cigarette holders the prices range from \$12 to \$1,500, these last being made of amber and gold or amber and platinum and set with semi-precious stones. Jeweled cigarette holders are used by women smokers, some of whom indulge in the luxury of having the color of the stones with which they are embellished match their costumes. The old three-inch long cigarette holder is quite passe, for a tube must be six inches long, at least, to be really fashionable. Blue and white, green and white, and red and white are among the latest color schemes of these very long cigarette holders for men.